1. The correct formula of hypo is

(a) $Na_2S_2O_3.5H_2O$ (b) Na_2SO_4

(c) $Na_2S_2O_3.4H_2O$ (d) $Na_2S_2O_3.3H_2O$

2. An example for a double salt is

(a) Silver nitrate (b) Mohr's salt

(c) Potassium ferricyanide (d)Cupromonium sulphate

3. Which of the following reacts with water with high rate

(a) Li (b) K

(c) Na (d) Rb

4. Tincal is

(a) $Na_2CO_3.10H_2O$ (b) $NaNO_3$

(c) $NaCl$ (d) $Na_2B_4O_7.10H_2O$

5. Which of the following chemicals, in addition to water, are used for the manufacture of Na_2CO_3 by Solvay process

(a) $NaCl, CO$ and NH_3

(b) $NaCl, CO_2$ and NH_3

(c) $NaCl, NH_4Cl$ and CO_2

(d) $NaHCO_3, CO$ and NH_3

6. Electrolysis of molten sodium chloride leads to the formation of

(a) Na and H_2 (b) Na and O_2

(c) H_2 and O_2 (d) Na and Cl_2

7. Which of the following is a use of alum

(a) Making explosives (b) Bleaching clothes

(c) Water softening (d) All of the above

8. A fire of lithium, sodium and potassium can be extinguished by

(a) H_2O (b) Nitrogen

(c) CO_2 (d) Asbestos blanket

9. Alkaline earth metals are denser than alkali metals, because metallic bonding in alkaline earth's metal, is

(a) Stronger (b) Weaker

(c) Volatile (d) Not present

10. Which of the following is a false statement

(a) Fluorine is more electronegative than chlorine

(b) Nitrogen has greater IE_1 than oxygen

(c) Lithium is amphoteric

(d) Chlorine is an oxidising agent

11. Photoelectric effect is maximum in
(a) Cs (b) Na
(c) K (d) Li

12. mongst $LiCl, RbCl, BeCl_2$ and $MgCl_2$ the compounds with the greatest and least ionic character respectively are
(a) $LiCl$ and $RbCl$ (b) $MgCl_2$ and $BeCl_2$
(c) $RbCl$ and $BeCl_2$ (d) $RbCl$ and $MgCl_2$

13. The colour given to the flame by sodium salts is
(a) Light red (b) Golden yellow
(c) Green (d) Pink

14. Washing soda is
(a) $Na_2CO_3.10H_2O$ (b) $Na_2CO_3.H_2O$
(c) $Na_2CO_3.5H_2O$ (d) Na_2CO_3

15. The main salt soluble in sea water is
(a) $MgCl_2$ (b) $NaCl$
(c) $MgSO_4$ (d) $CaSO_4$

16. When $NaCl$ is dissolved in water, the sodium ion is
(a) Oxidised (b) Reduced
(c) Hydrolysed (d) Hydrated

17. When CO is passed over solid $NaOH$ heated to 200^oC, it forms
(a) Na_2CO_3 (b) $NaHCO_3$
(c) $HCOONa$ (d) None

18. In the preparation of sodium carbonate, which of the following is used
(a) Slaked lime (b) Quick lime
(c) Lime stone (d) $NaOH$

19. Baking soda is
(a) Na_2CO_3 (b) $NaHCO_3$
(c) Na_2SO_4 (d) K_2CO_3

20. Soda ash is
(a) $Na_2CO_3.H_2O$ (b) $NaOH$
(c) Na_2CO_3 (d) $NaHCO_3$

21. Which of the following pair can't exist in solution
(a) $NaHCO_3$ and $NaOH$ (b) Na_2CO_3 and $NaOH$
(c) Na_2CO_3 and $NaCl$ (d) $NaHCO_3$ and $NaCl$

22. What is lye
(a) 10% solution of $NaCl$
(b) 10% solution of KOH
(c) 10% solution of $Ca(OH)_2$
(d) 10% solution of Na_2CO_3

23. Sn is dissolved in excess of $NaOH$ solution, the compound obtained is
(a) $Sn(OH)_2$ (b) Na_2SnO_3
(c) Na_2SnO_2 (d) SnO_2

24. During the electrolysis of fused sodium chloride, the anodic reaction is
(a) Reduction of sodium ions
(b) Oxidation of sodium ions
(c) Reduction of chloride ions
(d) Oxidation of chloride ions

25. The cell used for the electrolysis of fused $NaCl$ is
(a) Down's cell (b) Castner cell
(c) Solvay cell (d) Nelson cell

26. The alum used for purifying water is
(a) Ferric alum (b) Chrome alum
(c) Potash alum (d) Ammonium alum

27. Excess of Na^+ ions in our system causes
(a) High B.P. (b) Low B.P.
(c) Diabetes (d) Anaemia

28. Ferric alum has the composition $(NH_4)_2SO_4.Fe_2(SO_4)_3.xH_2O$
(a) 7 (b) 24
(c) 6 (d) 15

29. Which of the following is most reducing agent
(a) HNO_3 (b) Na
(c) Cl_2 (d) Cr

30. Pyrolusite is
(a) Carbonate ore (b) Sulphur ore
(c) Silicon ore (d) None of these

1. (a)

2. (b) $FeSO_4.(NH_4)_2SO_4.6H_2O$ Mohr's salt.

3. (d) $2Rb + 2H_2O \rightarrow 2RbOH + H_2$

$\xrightarrow{Li < Na < K < Rb < Cs}$

As we go down the group reactivity with H_2O increases.

4. (d)

5. (b)

6. (d) $\underset{\text{Molten}}{2NaCl} \xrightarrow{\text{Electrolysis}} \underset{\text{Cathode}}{2Na} + \underset{\text{Anode}}{Cl_2}$

7. (c) Alum is used for softning of water.

8. (c) Carbon dioxide does not help in burning, also it forms carbonate with alkali metals.

9. (a) Alkaline earth metals (ns^2) are denser than alkali metal (ns^1) because metallic bonding in alkaline earth metal is stronger.

10. (c) Lithium is basic in nature and hence it is not amphoteric.

11. (a) Group I element are so highly electropositive that they emit electrons even when exposed to light (Photoelectric effect) and this character increase on moving down the group from lithium towards cesium.

12. (c) According to Fajan's rule *RbCl* has greatest ionic character due to large ionic size of Rb^+ ion. $BeCl_2$ has least ionic (Maximum covalent) due to small size of Be^{+2} ion which has highly polarising.

13. (b)

14. (a)

15. (b)

16. (d)

17. (c) $NaOH + CO \xrightarrow[5-10\ \text{atm}]{150\,^\circ-200\,^\circ C} HCOONa$

18. (c)

19. (b)

20. (c)

21. (a)

22. (b)

23. (b) $Sn + 2NaOH + H_2O \rightarrow Na_2SnO_3 + 2H_2$

24. (d) $\underset{}{2NaCl} \xrightarrow{\text{Electric current}} \underset{\text{Cation}}{2Na^+} + \underset{\text{Anion}}{2Cl^-}$

25. (a) Down's cell is used for the electrolysis of fused $NaCl$

26. (c)

27. (a) Excess of Na^+ ion causes high B.P.

28. (b) Ferric alum is $(NH_4)_2SO_4.Fe_2(SO_4)_3.24H_2O$

29. (b)

30. (d) Pyrolusite or Manganese dioxide (MnO_2) is a mineral of manganese.